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Quantitative Conversion of Water to Carbon Dioxide

To aid in the laboratory analysis of water-bearing mixtures, a method has been developed for quantitatively converting water vapor to carbon dioxide.

A micro-bubbler assembly was constructed of a 10-cm length of tubing 9-mm in diameter, packed with small glass beads and fitted with O-ring connections. One ml of a 10% concentration of N, N¹ - carbonyl-diimidazole reagent in adiponitrile was placed in the micro-bubbler, and the water-bearing gas was bubbled through the reagent. The apparatus was pre-flushed with helium prior to use, and the carbon dioxide gas generated was recovered from a liquid nitrogen trap.

Because of the ease of mass-spectrographic analysis of carbon dioxide, this reaction permits direct and rapid analysis of mixed-gas streams for water content.

Note:

No additional information is available. Specific questions, however, may be directed to:

Technology Utilization Officer
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No patent action is contemplated by NASA.

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